Sam. Rob. Snowden

May 1, 1866.

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Pardee Scientific Course

IN

LAFAYETTE COLLEGE.

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CIRCULAR.

Pardee Scientific Course

IN

LAFAYETTE COLLEGE.

1866—67.

EASTON, PA.

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CURATOR OF THE MUSEUMS AND CABINETS.

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GENERAL STATEMENT.

The number of students in our country is great, and constantly increasing, who wish to study the Natural Sciences, Mathematics, Modern Languages and Literature, History, Rhetoric, Logic, and Mental and Moral Philosophy, as thoroughly as they are studied in our best colleges, and who would be glad to enjoy the cultivation and learned habits and associations of college life, but who will not study Greek and Latin.

In answer to this want many of the great universities and colleges have added to the old Classical course a parallel Scientific course; the aim of which, like that of the classical, is to secure the culture and elevation of mind, and to impart the useful and liberal learning, which becomes the Christian scholar.

To secure these advantages for such as prefer to pursue their studies at Lafayette College, A. PARDEE, ESQ., of Hazleton, Pennsylvania, has placed in the hands of the Trustees the sum of $100,000. This has enabled the Board to add to the Faculty of the College eminent instructors in the various departments of Physical Science, and the munificence of the citizens of Easton and of friends of the College elsewhere, has supplied funds for the buildings and apparatus necessary for a thorough Scientific Course.

The Trustees of the College are deeply impressed with the thought that our present collegiate system has grown up under the fostering care of the Church, and that the relations of our old college studies to manly culture and religious training, have been studied by generations of Christian educators. They have therefore taken care that the new course shall not be removed from the old land-marks, and that as far as possible the old approved methods of instruction shall be used in all the departments of study.

It will be found that the new course includes all the studies of the old except the Ancient Languages, and it is believed that the method of teaching English and other Modern Classics, which has been for some years in

use in the College, may be so adapted to the students of the new course as to give in a good degree the same kind of discipline that is derived from the study of Greek and Latin.

In addition to this general course of instruction, which is designed to lay a substantial basis of knowledge and scholarly culture, optional studies are arranged for the Senior year and for a POST-GRADUATE COURSE, so that the students may, if they choose, devote themselves to studies essentially practical and technical, viz., ENGINEERING, Civil, Topographical and Mechanical; MINING and METALLURGY; ARCHITECTURE; and the application of Chemistry to AGRICULTURE and the ARTS. There will also be afforded an opportunity for special study of TRADE and COMMERCE; of MODERN LANGUAGES and PHILOLOGY; and of the HISTORY and INSTITUTIONS of our own country.

It is perhaps scarcely necessary to add that the Board intend that the whole Scientific course shall have the Christian character which they have endeavoured to impress upon the studies of the College, and that science shall be here so taught as to become "the handmaid of religion." In not a few of the special schools established for scientific and technical studies in this and other countries, the instructions of able men have indirectly, if not directly, undermined the foundation of faith, especially in the existence of a personal God, and in the inspiration of the Scriptures.

All the departments of this course will therefore be in the hands of Christian scholars, who will not fail to improve, in their various instructions, the opportunity constantly recurring of directing the student from Nature to Nature's God. But in addition to this and also to the systematic and thorough study of the Word of God in all the classes, special lectures will be given upon the connection of Science with Revealed Religion, that the student may be thoroughly informed upon the issues that are made, and be prepared to meet the arguments from Physical Science, by which our common Christianity is usually assailed.

It ought to be added, that while the privileges of both the Classical and the Scientific course are offered to all young men of good moral character, the Institution is under the influence and control of the Presbyterian Church, and that no religious instruction is given inconsistent with the standards and confessions of that denomination.

TERMS OF ADMISSION.

Candidates for admission to the Freshman class for the Scientific Course are examined in Geography, Ancient and Modern; Arithmetic; Algebra, through Simple Equations; English Grammar; the outlines of History, and the general contents of the Bible.

Candidates for advanced standing are also examined in the studies gone over by the class which they propose to enter; but no student will be admitted to the Senior class after the beginning of the second session.

Any person who is prepared to pursue the advanced studies in Engineering, Mining and Chemistry, may be received as a special student.

Testimonials of good moral character are in all cases required; and those coming from other Institutions must produce certificates of dismission in good standing.

No student is considered a regular member of the Institution until he has been matriculated after a probation of thirty days, during which time he is subject to all the laws and regulations for the government of the students.

By a resolution of the Board of Trustees, every student is required to sign a pledge that during his college course he will have no connection with any secret society, except those authorized by the Board.

No one can be admitted to the Freshman class until he has completed his fourteenth year; and no one to advanced standing without a corresponding increase of age.

COURSE OF INSTRUCTION.

FRESHMAN YEAR.

FIRST TERM.	SECOND TERM.	THIRD TERM.
Algebra.	Geometry.	Algebra.
French.	German.	Geometry.
Anatomy and Physiology.	Chemistry.	Modern Languages.
Ancient Geography.	Greek Antiquities.	Roman Antiquities.
English Composition.	English Composition.	Botany.
Elocution.	Elocution.	English Composition.
Old Testament.	Old Testament.	Elocution.
Lectures on Health.	Biblical Geography.	New Testament.
Geographical Drawing.	Geometrical Drawing.	Biblical Geography.
		Geometrical Drawing.

SOPHOMORE YEAR.

FIRST TERM.	SECOND TERM.	THIRD TERM.
Plane Trigonometry.	Conic Sections.	Navigation.
Zoölogy.	Mensuration.	Surveying.
Trench on the Study of Words.	Chemistry.	Botany.
French.	German.	Political Economy.
English, Bunyan.	English, Spenser.	Logic.
Rhetoric.	Acts of the Apostles.	English, Chaucer.
Acts of the Apostles.	Geometrical and Topographical Drawing.	Biblical Antiquities.
Declamations and Themes.	Declamations & Themes.	Drawing of Plants.
Drawing in Zoölogy.		Declamations & Themes.
Taxidermy.		

JUNIOR YEAR.

FIRST TERM.	SECOND TERM.	THIRD TERM.
Analytical Geometry.	Natural Philosophy.	Natural Philosophy.
Calculus.	Anglo-Saxon.	Mineralogy.
German.	English, Milton.	Anglo-Saxon.
English, Daniel Webster.	Constitution of U. S.	Modern Languages.
History.	Political Philosophy.	English, Shakespeare.
New Testament Epistles.	French.	New Test. Epistles.
Geometrical and Topographical Drawing.	New Test. Epistles.	Machine Drafting.
Declamations & Themes.	Linear Perspective.	Declamations & Themes.
	Declamations & Themes.	

SENIOR YEAR.

FIRST TERM.	SECOND TERM.	THIRD TERM.
Mental Philosophy.	Moral Philosophy.	Butler's Analogy.
Natural Philosophy.	Evidences of Christianity.	Astronomy.
Spherical Trigonometry.	Astronomy.	Geology and Physical Geography.
Chemistry.	Geology & Phys. Geog.	Natural History.
Modern Languages and Literature.	Anatomy & Physiology.	Archæology of Literature.
Confession of Faith.	History.	Architecture.
Themes and Extemporaneous Speaking.	Rhetoric.	Comparative Philology.
	English Literature.	Themes, etc.
	Confession of Faith.	
	Themes, etc.	

In place of the general course of the Senior year, those students who desire to pursue technical and professional studies may substitute any one of the following courses by giving notice to the PRESIDENT before the close of the Junior year.

ENGINEERING COURSE.

FIRST TERM.	SECOND TERM.	THIRD TERM.
Spherical Trigonometry. Mechanics; Theory of Machines, Strength and Stability of Structures, and Mechanics of Fluids. Problems in Stone Cutting and Constructions. Geology and Physical Geography. Drawing Maps of Hydrographical Surveys. Mental Philosophy. Biblical Exercise.	Astronomy. Geology and Physical Geography. Road Engineering; Theory and Practice. Construction of Engineering and Architectural Works. Theory of Machines. Machine Drafting. Moral Philosophy. Evidences of Christianity.	Astronomy. Construction of Engineering and Architectural Works. Designs for, and Examinations of Special Works. Plans, Profiles, and Sections of Railway Surveys. General Reviews.

CHEMICAL COURSE.

FIRST TERM.	SECOND TERM.	THIRD TERM.
Geology and Physical Geography. Mineralogy. Technical Chemistry; Qualitative and Quantitative Analysis. Determinative Mineralogy. Mental Philosophy. Biblical Exercise.	Astronomy. Technical Chemistry. Assaying. Geology and Physical Geography. Construction of Chemical Works. Moral Philosophy. Evidences of Christianity.	Astronomy. Technical Chemistry. Special applications of Chemistry in Agriculture and the Arts. Natural History. Geology and Physical Geography. General Reviews.

MINING COURSE.

FIRST TERM.	SECOND TERM.	THIRD TERM.
Mechanics; Theory of Machines and Mining Tools. Strength and Stability of Structures. Practical Hydraulics, Practical Pneumatics.	Geology and Physical Geography.	Construction and Engineering of Mines.
Geology and Physical Geography.	Assaying.	Plans, Profiles, and Sections of Mines.
Technical Chemistry; Qualitative and Quantitative Analysis; Use of the Blow-pipe.	Metallurgy.	Examination of Mines and Mining Works.
Determinative Mineralogy.	Construction of Furnaces.	Treatment of Special Ores.
Mental Philosophy.	Survey and Exploitation of Mines.	Natural History.
Biblical Exercise.	Astronomy.	Geology and Physical Geography.
	Moral Philosophy.	General Reviews.
	Evidences of Christianity.	

Resident Graduates, and others having suitable preparation, may pursue the special studies of any Department in a POST-GRADUATE COURSE, under the direction and instruction of the Professor of that Department, and have the use of the Laboratories, Apparatus, Collections, Library, &c., while prosecuting researches in any Department. These studies and researches will not be confined to any fixed Course. Their general range may be found on pages 15, 16. Particular information may be obtained by addressing the PRESIDENT.

SUMMARY OF EXERCISES OF PRACTICE.

ASTRONOMY.	Use of Instruments, Working of Observatory.
BOTANY.	Field Excursions; preparation of herbarium; original description and drawing of plants, etc.
CHEMISTRY.	Manipulations in the Laboratory throughout the course.
DRAWING.	Throughout the course.
ENGINEERING.	Visits to works, and reports on them, giving plans, etc.; construction of models.
GEOLOGY.	Field excursions.
MINERALOGY.	Field excursions; manipulations of minerals, rocks, and metallurgical specimens; with the use of the blow-pipe.
MINING.	In the advanced course of Mining and Chemistry, application will be made in behalf of some of the best students to work during vacation in particular mines or manufactories.
ORATORY.	Declamations in class every week. A public exercise every Thursday morning in Chapel, at which all the students are present, and the classes speak by divisions. Seniors deliver original compositions.
PHYSICAL CULTURE.	Exercises in the Gymnasium through the course.
SURVEYS.	Levelling; calculation of excavations; surface and underground surveys; visits to mines and metallurgical works.
THEMES.	Original compositions upon assigned subjects.
ZOOLOGY.	Taxidermy; Drawing.

COLLECTIONS.

The citizens of Easton are now erecting spacious additions to the main College building, in which, besides additional rooms for the accommodation of students, there will be large Halls appropriated to Museums and Cabinets. These, when completed, are designed to illustrate all the departments of Natural Science, especially Mineralogy and Lithology; Geology and Palæontology, Botany and Zoölogy. Collections are also making of models and drawings of furnaces, mining tools, machines, and structures instructive to the Engineer and Architect.

ASTRONOMICAL OBSERVATORY.

The Observatory, which has just been erected for the College by the liberality of Professor TRAILL GREEN, consists of a Tower and two Transit Rooms, with a Lecture Room attached. It is fitted up with a revolving dome and telescope, a transit instrument, and other apparatus for the observation of astronomical facts, and for the thorough study of Astronomy.

JENKS CHEMICAL HALL.

A handsome and commodious building for the Chemical department has been erected by the liberality of B. H. JENKS, Esq., of Bridesburg, and is fitting up, with all the most approved modern appliances, for operation in inorganic, organic, and analytical Chemistry, and especially in Assaying and Metallurgy.

GENERAL REMARKS.

ENGINEERING.

CIVIL, TOPOGRAPHICAL, MECHANICAL.

The studies of this department in the Senior year and the POST-GRADUATE COURSE, are designed to give professional preparation for the location, construction and superintendence of Railways, Canals, and other Public Works, Chemical Works and Pneumatic Works; the design and construction of Bridges; the trigonometrical and topographical survey of States, Counties, etc.; the survey of Rivers, Lakes, Harbors, etc., and the direction of their improvements; the determination of Latitude, Longitude, Time, and the Meridian; the design, construction, and use of Steam Engines and other Motors, and of machines in general; and the construction of geometrical, topographical, and machine drawings.

MINING.

This department offers the means of special preparation for exploring undeveloped mineral resources, and for taking charge of mining or metallurgical works. It includes instruction in Engineering as connected with the survey, exploitation, and construction of mines; with the construction and adjustment of furnaces and machines; and with machine drawing; also instruction in Chemistry and Assaying, as applied to the manipulations of minerals. In addition to the general course, provision is made for advanced students who wish to give special attention to any branch of the subject, or to prepare themselves for the charge of particular mines. Any person who is prepared to pursue these studies with advantage may be received as a special student.

CHEMISTRY.

Students in this department are required to perform operations themselves, every facility for which is found in the Laboratory of JENKS CHEMICAL HALL. Particular attention is given to the Chemistry of Agriculture, Medicine, Metallurgy, and the Manufacturing processes. Provision is made for advanced students who may wish to make original researches, or to fit themselves to take charge of mines or manufactories, or to explore and work up the mineral resources of our own and other countries. Any person who is prepared to pursue these studies with advantage may be received as a special student.

LANGUAGES.

The English Language is studied in the same way as Latin and Greek are in the Classical course. An English classic, Milton's Paradise Lost, for example, is studied just as the most skilful Professors of Greek teach the Iliad of Homer. The text is minutely analysed, the idioms explored, and synonyms weighed; the mythology, biography, history, metaphysics, theology, geography, are all looked up; and whatever else is necessary, that every allusion may be comprehended.

The character of the author, and his life and times are also studied, since these are necessary to a comprehension of his work and his speech; and comparison is continually made with the language of other great English authors, and of the English Bible; so that the relation of each author to English literature and the English race may be carefully examined.

The rhetorical laws of English Composition, and the principles of Epic and Dramatic art are applied to Milton, Shakespeare and other English Classics, line by line; and an attempt is made to comprehend the particular beauties and apprehend the general plan of the great representative works of English literature.

The text is also made the foundation of more general study of language; the origin and history of recurring words, the laws by which words grow up from their roots in our language, the laws by which changes from one language to another are governed, are stamped on the mind by continual iteration; and an attempt is made to ground all these facts and laws in laws of mind, and of the organs of speech.

For this best discipline and learning which modern philology enables us to draw from the study of languages, no language affords a better field than our own English: and it is believed that the culture in this department will be to a considerable extent a substitute for that derived from the study of Greek and Latin, as it is usually pursued in our colleges.

Anglo-Saxon, German and French, are studied in the same way, and all are systematically compared in the light of modern philology so as to illustrate each other, and language in general.

This method of English study is pursued in the Classical course, and all graduates of the College, and any other persons who are prepared for such studies, may pursue the study of the English Language and Literature in a special post-graduate course.

PHYSICAL CULTURE.

The design of this department is to secure healthful daily exercise and recreation to all the students, and to teach them the laws of health. It

ineludes training in the use of the voeal organs, and in movement and manners as eonnected with oratory. This physical training is part of the regular College eourse. The daily exercises in the Gymnasium, after the most approved methods of instruetion, are attended by all the elasses as a regular college exercise, and under the immediate supervision of the Professor of Physieal Culture.

BIBLICAL INSTRUCTION.

It is not proposed to make the Holy Seriptures a subjeet of professional study, as in our Theologieal Schools, but there is eareful provision made for sueh general instruction in its great truths, its history, antiquities, &c., as is essential to every liberally educated man.

In the Freshman year, a general view of the eontents of the Bible, and of each book, is given, with special attention to Chronology, History, and Geography. The Bible in English and Coleman's Biblieal Geography are used as text-books. In the Sophomore year, the Acts of the Apostles are read, and special study is given to the lives and labors of the Apostles, and to the origin and antiquities of the Christian Chureh. In the Junior year, the Epistles of Paul are earefully studied, and in the Senior year the history of translations of the Bible, especially the history of the English Bible, its merits and influences; the evidenees of Christianity, with Butler's Analogy, and the Confession of Faith.

Throughout the eourse, the language of the English version is eonstantly examined, and referred to, as standard English. In Political Philosophy, reference is made to the Hebrew Commonwealth. The truths taught in the Bible in relation to the charaeter, powers, and duties of man, are inculcated as fundamental in Mental and Moral Philosophy, and the Philosophy of History is identified with the History of Redemption.

RELIGIOUS EXERCISES.

All the students attend prayers in the College Chapel morning and evening, and preaching on Sabbath afternoons. On Sabbath morning, students attend services in one of the churches of the Borough. Thursday evening there is divine service eondueted by the President, or one of the Professors, which the students are invited, but not required, to attend.

SOCIETIES.

There are two Literary Soeieties in the College, the WASHINGTON and FRANKLIN, which have spacious and well furnished Halls. Each Society has also a valuable library.

The BRAINERD EVANGELICAL SOCIETY holds its anniversary, and has a public address, on Sabbath evening preceding Commencement.

On the day preceding Commencement, the Literary Societies hold reunion meetings in the forenoon, and an oration is delivered before them in the evening. The Junior exhibition takes place on Monday evening preceding Commencement.

ALUMNI SOCIETY.

The Alumni Society is composed of graduates of the College and such of their classmates (who left College before graduation, and in good standing) as may be elected. The annual meeting is held in the College Chapel on Tuesday afternoon preceding Commencement day.

READING ROOM.

The Lafayette Reading Room is under the control of a Society for procuring and preserving standard periodicals and books of reference. Any student may become a member. Its hall is open daily (Sundays excepted) for general reading, out of study hours.

LIBRARIES.

The College Library is open Wednesdays and Saturdays, at nine o'clock, A. M.; that of the Franklin Society, on Saturday afternoon; of the Washington Society, on Thursday morning; and of the Brainerd Society, at its regular meetings.

TERMS AND VACATIONS.

The College year is divided into three terms or sessions. The Annual Commencement is on the last Wednesday of July, and the first term of the next College year begins six weeks after, and continues fourteen weeks. A vacation of four weeks follows, after which the second term begins, and continues thirteen weeks. The last session commences on Thursday, twelve weeks preceding Commencement.

For the Calendar, see page 20.

ATTENDANCE.

Students are required to be present punctually at the commencement of each session, and are not allowed during term-time to be absent from town, except by written permission from the President or Faculty.

A record is kept of the punctuality, diligence, scholarship, and general behaviour of each student; a report of which is sent to the parent or guardian at the close of each session.

EXAMINATIONS.

All the classes are examined at the close of the first and the second session; the Senior class is examined six weeks before Commencement; the three lower classes the week preceding Commencement.

DEGREES.

Students who have completed the full course of four years, and passed a satisfactory final examination, and who have submitted to the Board of Examiners an approved Thesis upon a subject embraced in any of the Technical Courses, will be admitted to the degree of BACHELOR OF SCIENCE.

Students who have been admitted to any part of the Scientific Course, and have passed satisfactory examinations therein, may obtain certificates of the same, on payment of the regular graduation fees, if they have been in attendance not less than one year.

The degree of MASTER OF SCIENCE is conferred (upon payment of the usual fee of $5) on any BACHELOR who has pursued for two years the Post-Graduate Course of the College in any of the scientific departments, or who has elsewhere, for three or more years, engaged in scientific pursuits.

EXPENSES.

Tuition, per session,	$15 00
Fuel, " " (average,)	5 00
Room rent " " "	3 50
Incidental expenses, (servants' wages, &c.)	1 75
For the use of the Gymnasium,	1 00
For the use and increase of the Library,	1 00

The matriculation or admission fee is $3; the fee for diploma, &c., at graduation is $6. The fees for students pursuing advanced studies in Chemistry, Mining, Engineering, &c., may be learned on application to the PRESIDENT.

Apparatus for the use of students in the Chemical Laboratories will be furnished and charged in their account, and the charge cancelled for that returned in good condition. Chemicals and all other materials will be charged according to the average cost.

For the present the scholarships securing free tuition in the regular College classes will hold good for the Scientific Course, unless the student, in the Senior year, shall elect one of the professional courses, in which case he must pay for that year one-half the regular fee for tuition.

No student is permitted to board at a public hotel; and in all cases the place of boarding must be approved by the Faculty. The price of board in clubs is from $2.25 to $4.00 per week. This is, of course, a large advance on former prices. Before the war, boarding in some of the clubs was only $1.00 per week.

Tuition, room-rent, incidentals, and charge for Gymnasium and Library, must be paid each session in advance; and no student is permitted to recite until the receipt of the Treasurer is obtained. The matriculation or admission fee is paid thirty days after entering College. Students obtain washing at about one dollar a month. Some money for books and other incidental expenses will be needed; but it is strongly recommended that parents furnish their sons with little beyond what will meet their necessary expenses.

Parents or guardians at a distance may deposite funds with some member of the Faculty, who will pay a particular attention to the pecuniary concerns of the student, settling his bills and transmitting an account of the expenditure; for which services he will charge a commission.

CALENDAR.

1866.

September 5, Wednesday. Examination for admission.
September 6, Thursday, First term commences.
December 12, Wednesday. First term ends.

Vacation of Four Weeks.

1867.

January 10, Thursday. Second term commences.
April 10, Wednesday. Second term ends.

Vacation of Three Weeks.

May 2, Wednesday. Third term commences.
June 10—12, Final examination of Senior Class.
July 18—22, Examination of lower classes.
July 21—24, Commencement Exercises.

Vacation of Six Weeks.

September 4, Wednesday. Examination for admission.
September 5, Thursday. First term commences.